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ABSTRACT

The adjustment of medical school faculty members to a new curriculum, called problem-based learning, was studied. Nineteen faculty members who taught in both a lecture-based and tutorial program over 2 academic years were surveyed. Besides the teacher-centered approach, the other model of learning was student-centered and could be conducted in small group tutorials. For this new approach, the role of the faculty tutor was to act as a facilitator for student's self-learning, rather than the faculty member's traditional role of imparter of information. The data indicate that a new curriculum provided an added stimulation and excitement that offset the frustration of change for the participating faculty. Faculty saw the new program as inferior to the old in imparting breadth of content, yet superior in the type of student it may produce. The faculty were impressed with the new curriculum and were highly adaptive and willing to see positive aspects in the new experience. They viewed the new program as integrating both students' and teachers' knowledge in the basic and clinical sciences. (SW)

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Faculty Adaptation to an Experimental Curriculum

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Abstract

With mounting dissatisfaction among students with medical education, and an increasing concern among educators about the sharp division between basic and clinical sciences, a new curriculum, called problem-based learning, was instituted at a school of medicine alongside a conventional curriculum. Because faculty teach in both curricula, and because faculty support is crucial to student learning, a survey was conducted among faculty concerning their impressions of the new curriculum and its legitimacy for their institution. Results indicate that faculty were impressed with the new curricula and felt that, not only did the new program integrate the students' knowledge in the basic and clinical sciences, but also served the same purpose for faculty.

There is mounting dissatisfaction among many medical students with the traditional, didactic teacher-centered form of instruction.[1,2,3,4] This concern is also reflected among educators who question the validity of such an educational approach. Learning theory predicts that students' absorption of material is enhanced when its selection is self-defined, and students are active in their own learning.[5,6] This issue is of particular importance to medical educators in light of mounting evidence of a poor relationship between performance of medical students in their early teacher-centered course work and their later patient-centered clinical clerkship.[7]

Besides the teacher-centered approach, another model of learning is student-centered and can be conducted in small group tutorials in which students are charged with developing their own learning issues after grappling with a scientific problem. Learning seems relevant for material studied is that required for addressing the problem under discussion. In this setting, the role of the faculty "tutor" is that of a facilitator for students' self-learning rather than the faculty's traditional role of imparter of information. Thus, the tutor's role is not to answer questions but to help students better define and answer their own.[8]

A faculty member accustomed to traditional teaching placed in a tutorial setting must, therefore, make a substantial role adjustment. The degree to which the instructor can successfully achieve this transition is central to the success of tutorial learning for the participating students. A study has thus been designed to assess the attitude of medical school faculty members accustomed to traditional teaching roles, toward their newly assumed role as tutor. The setting was at a school of medicine where two educational tracks run concurrently during the first two years. One is largely lecture based where students are frequently examined on the content gained. The other is

tutorial based with an attempt to integrate the basic and clinical sciences in a problem-based curriculum. Students are evaluated on their process of information gathering and problem solving, rather than the amount of information gathered. As a result, the two curricula not only provide different methods of teaching the sciences basic to medicine, but also offer different approaches to student evaluation.[9] Faculty teaching in both curricula were therefore called upon to adjust to two very different approaches to teaching methodology.

Methods

Faculty members, who taught in both the lecture based and tutorial program over two academic years, were participants in the study. They were asked to fill out a questionnaire eliciting: 1) background information, 2) attitudes toward lecture based and tutorial-based medical education, and 3) discuss their experiences as a tutor.

Results

Of the 19 faculty who responded to the questionnaire, eight described themselves as basic scientists and eleven as clinicians. As a group, they had an average of ten years of teaching in medical education. When the basic scientists' responses were compared to the clinicians', no significant differences appeared on any of the items, indicating a general consensus between the two groups on their perceptions of the two tracks. When comparisons were made within the entire group on their perceptions between the PCC track and the Regular track, some significant differences arose. When asked about the impact which the different tracks have on fostering certain skills in the pre-clinical student, faculty felt that the Regular track was more successful in teaching breadth of content. However, they evaluated the experimental program as being more able to facilitate reasoning process, interpersonal

skills, self-motivated learners, students more readily able to give and accept criticism, and students who were able to develop positive relationships among their peers and with faculty (Table I). In terms of the quality of evaluation, the faculty felt that there was no difference in the ability to evaluate content; however, they assessed the experimental curriculum evaluation as providing a better measure of the reasoning process, as well as interpersonal skills (Table I).

When asked about the benefits from this new teaching experience, some differences emerged between basic scientists and clinicians. Basic scientists found the experience rewarding in its offering of an opportunity to interact with a group of students, to learn a new method of teaching, and to become more familiar with clinical problems. With the clinicians the experience was overwhelmingly positive in helping them refine and "freshen up" on their basic science content. It also provided them an experience with working closely with a group of students in an academic environment.

Discussion

The data indicates that a new curriculum provides an added stimulation and excitement which offsets the frustration of change for the participating faculty. Faculty saw the new program as inferior to the old in imparting breadth of content, yet superior in the type of student it may produce. They found little difference overall which indicated that in spite of a new methodological approach faculty were highly adaptive and willing to see positive aspects in the new experience.

Furthermore, the problem-based tutoring experience provided an integration of the faculty's skills. The clinicians had an opportunity to integrate basic sciences into clinical medicine, again, and the basic scientists had an opportunity to increase their understanding of clinical skills. Although the

goal of such a program is to provide an integrated experience for students, it appears that it also had the side-effect of providing a similar experience for faculty.

Although the faculty seemed highly positive toward the curriculum, several artifacts may exist. The faculty, although chosen in different ways by departments, remain a self-selected group. Their enthusiasm may reflect their excitement for a new curriculum rather than an honest opinion of its working. When asked to indicate where they would prefer to teach, 63% of the tutors indicated a preference to teaching both curricula, whereas only 31% indicated a preference for the experimental track only. Such a response might indicate a faculty self-motivated to teach rather than a faculty with a particular preference toward one group over another. As a result, the enthusiasm may diminish the frustrations of role change and will not reflect the possible resistance from the faculty who have not been involved to date.

Conclusions

In spite of the differences in teaching philosophies of two curricula, faculty participating in both could do so with apparent satisfaction and little confusion. Furthermore, a curriculum which attempted to integrate the basic and clinical sciences for the students succeeded to do the same for the faculty, suggesting a measure of success not previously expected.

Table I

Faculty Assessment of Education Methods of PCC

in Comparison to the Conventional Track

	X^2	p
Ability to cover basic science	12.5116	.02**
Ability to cover content depth	8.716	N.S.*
Ability to foster reasoning process	21.33	.001*
Ability to foster interpersonal skills	22.316	.001*
Ability to promote self-motivated learners	27.46	.001*
Ability to promote given and accepting criticism	28.023	.001*
Ability to promote positive relationship among students	27.24	.001*
Ability to promote positive relationship among faculty/students	34.30	.001*
Ability to evaluate content knowledge	.894	N.S.
Ability to evaluate reasoning process	26.08	.001*
Ability to evaluate interpersonal skills	29.99	.001*
Ability to evaluate interpersonal skills faculty/peer	29.59	.001*

* In favor of PCC

** In favor of Conventional

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